

Report Information
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Personal identification using a face image and two-dimensional symbols.

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Conference information

Proceedings of 4th IASTED International Conference on Signal and Image Processing, Kaua'i, HI, USA, 12–14 Aug. 2002.
Sponsor(s): IASTED.

Source

Proceedings of the Fourth IASTED International Conference Signal and Image Processing, 2002, p. 460–3, 2 refs, pp. vi+674, ISBN: 0–88986–340–7. Publisher: ACTA Press, Anaheim, CA, USA.

Author(s)

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Kobayashi, T., Masuda, T., Okawa, T., Dept. of Comput. & Information Eng., Nippon Inst. of Technol., Saitama, Japan.

Abstract

Two-dimensional symbols are constructed by means of extending the functions of **barcodes**. Two-dimensional symbols have characteristics such as large recording capacity and error correction capability. This paper investigates a student identification card system using Aztec **code** for a two-dimensional symbol. A prototype student identification card system that uses two-dimensional symbols encoding both personal data and a **face** image is implemented. A personal identification method using the system is implemented. The student identification system with two-dimensional symbols is useful to increase the functions of the student identification card and to improve the security of personal identification.

Descriptors

DATA–ENCAPSULATION; ERROR–CORRECTION; **FACE**–RECOGNITION;
IDENTIFICATION; IMAGE–CODING; SECURITY–OF–DATA; SMART–CARDS.

Classification codes

B6135E **Image**–recognition*;
B6135C **Image**–and–video–coding;
C5260B Computer–vision–and–image–processing–techniques*;
C6130S Data–security.

Keywords

face–image; two–dimensional–symbols; error–correction–capability;
large–recording–capacity; student–identification–card–system; Aztec–
code; personal–identification–method; personal–identification–
security.

Treatment codes

P Practical.

Language

English.

Publication type

Conference–paper.

Publication year

2002.

Publication date

20020000.

Edition

2004023.

Copyright statement

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A personal identity annotation overlay system using a wearable computer for augmented reality.

Dialog eLinks

Full text options **USPTO Full Text Retrieval Options**

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Source

IEEE Transactions on Consumer Electronics, {IEEE-Trans-Consum- Electron-USA}, Nov. 2003, vol. 49, no. 4, p. 1457-67, 34 refs, **CODEN**: ITCEDA, ISSN: 0098-3063. Publisher: IEEE, USA.

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Author affiliation

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Abstract

There is surely no doubt that computers play an important role in our life. The use of computers ranges from convenient tools like calculators to various lives saving equipment. They help to save a great amount of human effort in many areas. To accomplish special tasks in different workplaces, it would be of great advantage to develop proper devices and to use wearable computers to meet the goals successfully. That is why we use the support of different kinds of computers such as the Global Positioning System (GPS), personal digital assistant (PDA), digital **bar code** reader, etc. Using a portable or wearable computer, we can work outside our offices or even in bed. Thus, our work environment has changed considerably. In many new environments, computers can help us to increase our perception and interaction abilities. Augmented reality (AR) is a good example of a tool used to enhance a human's perception and interaction abilities. AR provides a natural method for presenting computer-generated information by overlaying graphics into a view of the real world. This paper describes a personal identity annotation system using a wearable computer for an AR environment, which allows its user to **recognize** unknown persons. For implementing, the proposed system uses skin-color pixels coupled with shape and **face** features to detect and track faces in images taken by a wearable camera. Faces in a view are detected by searching for connected regions of skin color pixels. For each region big enough, an elliptic area is determined with the highest image gradient magnitude around the perimeter and the highest number of enclosed skin color pixels. The **face** regions enclosed by the determined ellipses are then used by the system to **recognize** multiple faces based on the **face** similarity. Experimental results show that the proposed system has both quality and performance to be used as a guiding system for visitors in various equipments.

Descriptors

AUGMENTED-REALITY; BIOMETRICS-ACCESS-CONTROL; **FACE**-RECOGNITION; VIDEO-SIGNAL-PROCESSING; WEARABLE-COMPUTERS.

Classification codes

B6135E **Image**-recognition*;
C5260B Computer-vision-and-image-processing-techniques*;
C5430 Microcomputers;
C5540B Interactive-input-devices;
C6130V Virtual-reality.

Keywords

personal-identity-annotation-overlay-system; wearable-computer;
augmented-reality; portable-computer; human-perception; interaction-abilities; computer-generated-information; overlaying-graphics; skin-color-pixels; **face**-tracking; **face**-detection; **multiple-face**-**recognition**.

Treatment codes

P Practical;
T Theoretical-or-mathematical;

X Experimental.

Language

English.

Publication type

Journal-paper.

Availability

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The use of biometrics for safety and health.

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Source

Atw. Internationale Zeitschrift fur Kernenergie, {Atw-Int-Z-Kernenergie- Germany}, Jan. 2003, vol. 48, no. 1, p. 35-7, ISSN: 1431-5254. Publisher: INFORUM GmbH, Germany.

Author(s)

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Abstract

Access to the controlled area of a nuclear power plant is subject to specific preconditions. They include the provisions of the Radiation Protection Ordinance in which the limits of possible radiation doses to persons working in the plant are laid down. This is why access to controlled areas is permanently monitored for control and protection purposes. At the Gundremmingen Nuclear Power Station, this is ensured by a comprehensive hardware and software solution, among other things. On the basis of the **ZN-Face face recognition** system, an automatic device set up at the entrance to the controlled area (KB-E-Automat) determines the identity of the person seeking access and decides on access on the basis of some preconditions. On the basis of a camera image, the KB-E-Automat unit compares the **bar code** data scanned of the film dosimeter with 1700 characteristic features of the **face** on the reference picture of that person stored in the systems database. After the person has been verified, the data in the dosimetry system are checked; if all criteria turn out to be positive, access is granted. The access control system can easily be integrated into an existing infrastructure, such as a dosimetry system, and is designed so as to be user-friendly.

Descriptors

BIOMETRICS-ACCESS-CONTROL; DOSIMETRY; **FACE**-RECOGNITION; FISSION-REACTOR-SAFETY; NUCLEAR-POWER-STATIONS.

Classification codes

A2880C Dosimetry-in-nuclear-engineering*;
A2844 Fission-reactor-protection-systems-safety-and-accidents;
C5260B Computer-vision-and-image-processing-techniques*.

Keywords

biometrics; nuclear-power-plant; controlled-area; Gundremmingen-Nuclear-Power-Station; **ZN**-Face-face-recognition-system; KB-E-Automat; face-recognition; dosimetry.

Treatment codes

P Practical.

Language

German.

Publication type

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Availability

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FaceCerts.

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0007762381 20070101.

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Data Compression Conference, Snowbird, UT, USA, 25-27 March 2003.

Sponsor(s): Brandeis Univ.

Source

Proceedings DCC 2003. Data Compression Conference, 2003, p. 435, 2 refs, pp. xii+461, ISBN: 0-7695-1896-6. Publisher: IEEE Comput. Soc, Los Alamitos, CA, USA.

Author(s)

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Abstract

Summary form only given. The proposed electronic systems for personal ID verification need to connect to a remote database and retrieve a stored photo for the comparison with the image on the ID. Unlike these systems, FaceCerts is an off-line person identification system that relies on public-key cryptography for provable security, while deploying a standard-quality low-cost color printing process. The basic requirement for the **face** compression algorithm in this system is discussed. A simple printing and scanning process combined with the **face** compression and matching software provides strong reliability of the FaceCerts system, resulting in relatively low likelihood of false negatives and cryptographically strong likelihood of a false positive.

Descriptors

DATA-COMPRESSION; **FACE**-RECOGNITION; IMAGE-CODING; IMAGE-MATCHING; PUBLIC-KEY-CRYPTOGRAPHY.

Classification codes

B6135C Image-and-video-coding*;

B6135E **Image**-recognition;

B6120D Cryptography;

C5260B Computer-vision-and-image-processing-techniques*.

Keywords

FaceCert-ID-system; off-line-person-identification-system; public-key-cryptography; **face**-compression-algorithm; printing-process; scanning-process; arbitrary-typed-messages; 2-D-color-bar-code.

Treatment codes

P Practical.

Language

English.

Publication type

Conference-paper.

Availability

CCCC: 1068-0314/03/\$17.00.

Publication year

2003.

Publication date

20030000.

Edition

2003041.

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Search Strategy

No.	Database	Search term	Info added since	Results
1	INZZ	(face OR facial) ADJ (recogni\$4 OR segment\$5)	unrestricted	10822
2	INZZ	barcode\$1 OR bar ADJ code\$1 OR bar-code\$1	unrestricted	2944
3	INZZ	security	unrestricted	132013
4	INZZ	badge OR badges OR tag OR tags	unrestricted	9258
5	INZZ	1 AND 4	unrestricted	12
6	INZZ	1 AND 2	unrestricted	11

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